

### 3. *Simulated torch fire test.*

a. A torch-fire environment must be simulated in the following manner:

(1) The source of the simulated torch must be a hydrocarbon fuel with a flame temperature of 1,204 °C (2,200 °F), plus-or-minus 37.8 °C (100 °F), throughout the duration of the test. Furthermore, torch velocities must be 64.4 km/h  $\pm$  16 km/h (40 mph  $\pm$  10 mph) throughout the duration of the test.

(2) A square bare plate with thermal properties equivalent to the material of construction of the tank car must be used. The plate dimensions must be at least four feet by four feet by nominal 1.6 cm (0.625 inch) thick. The bare plate must be instrumented with not less than nine thermocouples to record the thermal response of the plate. The thermocouples must be attached to the surface not exposed to the simulated torch and must be divided into nine equal squares with a thermocouple placed in the center of each square.

(3) The bare plate holder must be constructed in such a manner that the only heat transfer to the back side of the plate is by heat conduction through the plate and not by other heat paths. The apex of the flame must be directed at the center of the plate.

(4) Before exposure to the simulated torch, none of the temperature recording devices may indicate a plate temperature in excess of 37.8 °C (100 °F) or less than 0 °C (32 °F).

(5) A minimum of two thermocouples must indicate 427 °C (800 °F) in four minutes, plus-or-minus 30 seconds, of torch simulation exposure.

b. A thermal protection system must be tested in the simulated torch-fire environment described in paragraph 3a of this appendix in the following manner:

(1) The thermal protection system must cover one side of the bare plate identical to that used to simulate a torch fire under paragraph 3a(2) of this appendix.

(2) The back of the bare plate must be instrumented with not less than nine thermocouples placed as described in paragraph 3a(2) of this appendix to record the thermal response of the material.

(3) Before exposure to the simulated torch, none of the thermocouples on the back side of the thermal protection system configuration may indicate a plate temperature in excess of 37.8 °C (100 °F) nor less than 0 °C (32 °F).

(4) The entire outside surface of the thermal protection system must be exposed to the simulated torch-fire environment.

(5) A torch-simulation test must be run for a minimum of 30 minutes. The thermal protection system must retard the heat flow to the plate so that none of the thermocouples on the backside of the bare plate indicate a plate temperature in excess of 427 °C (800 °F).

(6) A minimum of two consecutive successful torch-simulation tests must be performed for each thermal protection system.

[Amdt. 179-50, 60 FR 49078, Sept. 21, 1995]

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AUTHORITY: 49 U.S.C. 5101-5127; 49 CFR 1.53.

SOURCE: Amdt. 180-2, 54 FR 25032, June 12, 1989, unless otherwise noted.

## Subpart A—General

### § 180.1 Purpose and scope.

This part prescribes requirements pertaining to the maintenance, reconditioning, repair, inspection and testing of packagings, and any other function having an effect on the continuing qualification and use of a packaging under the requirements of this subchapter.

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### § 180.2 Applicability.

(a) Any person who performs a function prescribed in this part shall perform that function in accordance with this part.

(b) Any person who performs a function prescribed in this part is considered subject to the regulations of this subchapter when that person—

(1) Makes any representation indicating compliance with one or more of the requirements of this part; or

(2) Reintroduces into commerce a packaging that bears markings indicating compliance with this part.

[Amdt. 180-2, 54 FR 25032, June 12, 1989, as amended by Amdt. 180-2, 56 FR 27877, June 17, 1991]

### § 180.3 General requirements.

(a) No person may represent, mark, certify, sell, or offer a packaging or container as meeting the requirements of this part, or a special permit pertaining to this part issued under subchapter A of this chapter, whether or not the packaging or container is intended to be used for the transportation of a hazardous material, unless it is marked, maintained, reconditioned, repaired, or retested, as appropriate, in accordance with this part, an approval issued thereunder, or a special permit issued under subchapter A of this chapter.

(b) The representations, markings, and certifications subject to the prohibitions of paragraph (a) of this section include:

(1) Identifications that include the letters "DOT", "MC", "ICC", or "UN";

(2) Special permit, approval, and registration numbers that include the letters "DOT";

(3) Test dates displayed in association with specification, registration, approval, or exemption markings indicating conformance to a test or retest requirement of this subchapter, an approval issued thereunder, or a special permit issued under subchapter A of this chapter;

(4) Documents indicating conformance to the testing, inspection, maintenance or other continuing qualification requirements of this part; and

(5) Sales literature, including advertising, indicating that the packaging